Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division

http://www.state.hi.us/doh/resource/comm_dis/cdr.html September/October 2002

West Nile Disease Surveillance in Hawai`i

Background

The Hawai`i State Department of Heath (DOH), along with the State Department of Agriculture (DOA), the State Department of Land and Natural Resources (DLNR), the U.S. Postal Service (USPS), the U.S. Geological Survey (USGS) and the Hawaiian Humane Society, are developing a statewide effort to prevent the introduction of West Nile virus (WNV) in Hawai`i.

West Nile disease is a flavivirus commonly found in Africa, West Asia and the Middle East. It was first found in the United States (U.S.) in 1999 on the east coast. The virus can infect humans, birds, mosquitoes, horses and some other mammals. It causes a mild disease in people, characterized by flu-like symptoms. The disease typically lasts only a few days and does not appear to cause any long-term health effects. This form is seen in about 20% of infected people. Less than one percent develop a more severe disease resulting in an encephalitis, meningitis or meningoencephalitis.

To date, WNV has not been detected in Hawai`i, and there have been no reported cases. The statewide campaign is a precautionary measure designed to prevent the introduction and spread of the virus in the islands.

Through September 25, 2,121 laboratory-positive human cases have been reported from 33 states in 2002. In nine additional states, the disease has been diagnosed in birds, but not in humans. The State of Hawai`i is one of only eight states in which the disease has not been found.

Dead Bird Surveillance

"Hawai`i's geographic isolation provides a natural protection from this disease that is thought to be transmitted by migratory birds. Most of Hawai`i's migratory birds come from places that thankfully, remain West Nile Virus-free, including Alaska," explained Director of Health Dr. Bruce Anderson. "Still, given the threat to human health and wildlife, we must be proactive and take all reasonable steps toward preventing the virus from being introduced in Hawai`i," Anderson added.

Because the most likely carriers of WNV are migratory birds, the U.S. Centers for Disease Control and Prevention (CDC) is recommending states place a priority on surveying and monitoring imported bird populations. Hawai`i's prevention effort focuses on ongoing surveillance of seven species of birds in Hawai`i that have been identified as potential carriers of the virus. They are: house sparrows, finches, bulbuls (red-vented and red-whiskered varieties), common mynah, cardinals (Brazilian and North American varieties), hawks and owls. State employees from the DOH, DOA and DLNR will immediately begin monitoring and testing these seven species of birds that are found dead as the most effective way to identify the presence of the disease in Hawai`i.

Cardinal

The public is being asked to assist with dead bird collection efforts. Anyone finding a bird dead less than 48 hours that is one of the seven species should safely (using gloves or a plastic bag) collect the bird in a plastic bag, insert the bag containing the carcass into a second bag, and deliver it to the Humane Society on Kaua`i and O`ahu. For Hawai`i, the DOH requests that residents finding dead birds drop them off at one of the three humane societies (Waimea, Kailua-Kona, Keaau), offices of the DLNR Division of Forestry and Wildlife (DOFAW) (Kamuela and Hilo)

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or at the Waiakea Health Center. For Maui, DOFAW offices and the humane society will receive the birds. Dead birds will be picked up at the designated locations for testing by the DOH. Birds collected on the neighbor islands will be shipped frozen at regular intervals to Honolulu for testing. While the public should avoid directly touching the dead bird, WNV cannot be contracted by physical contact between birds and humans.

House Sparrow

Java Sparrow

Other Activities

In addition to the dead bird collection and testing, other efforts to prevent WNV from being introduced into Hawai`i include:

- The DOA imposed an immediate embargo, effective September 19, 2002, on birds and poultry shipped to Hawai`i through the U.S. Postal Service;
- A new seven-day quarantine on all imported birds is being considered by the DOA;
- Ongoing monitoring and testing of all ships and planes arriving in Hawai`i through the state's existing Port of Entry program which seeks to prevent mosquitoes and other disease-carrying pests from entering the state;
- Ongoing mosquito control and surveillance programs statewide focused on eliminating mosquito breeding sites;
- A new, public education web site has been created that features information about the West Nile virus, and what the public can do to help prevent spread of the disease. It can be accessed at *www.state.hi.us/doh/wnv/*. Reporting forms for dead bird submission and instructions on handling the birds are available on this web page, as are photographs of the various species being sought.

Human Surveillance

"We will also be testing human blood samples for the virus at the request of local physicians, and will continue to work closely with Hawai`i's medical community and urge them to be on the lookout for symptoms of the disease as another precautionary measure," added Anderson.

"Without these precautionary measures in place, West Nile virus has the potential to become a serious health threat in Hawai`i," cautioned Anderson. "All of the appropriate state agencies are working closely together to prevent it from getting into Hawai`i," he added.

The DLNR has cautioned the public that WNV could have a serious impact on native birds. "Our native forest birds are generally affected by most introduced diseases and will likely be highly susceptible to this new virus," said Mike Buck of the DLNR. "We're asking the public to help us protect one of Hawai'i's most precious natural resources – our native birds – by helping keep our native birds disease-free," he added. DLNR employees on Maui and the Big Island will be receiving dead birds found by residents.

"We are urging the public to help us keep Hawai'i's people and animals safe by bringing any dead birds that are one of the seven species to the Humane Society office on O'ahu, Kaua`i and Hawai`i," said Linda Haller of the Hawaiian Humane Society in Honolulu. "Our people statewide are standing by and ready to assist," she added.

Hawai`i recently successfully contained and controlled an outbreak of dengue fever, primarily through a public-private partnership effort to prevent and eliminate mosquitoes and mosquito-breeding sites. The DOH will continue to stress the need for ongoing mosquito control efforts in Hawai`i's as part of an overall effort to protect public health in the islands.

For more information, please see the September 26, 2002 issues of the Honolulu Advertiser and Honolulu Star-Bulletin.

Submitted by David M. Sasaki, D.V.M., M.P.H., Veterinary Medical officer, Epidemiology Branch.

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Information & Disease Reporting	586-4586
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2001-02 Influenza Summary

Strains identified during 2001-2002

Hawai`i's influenza season, September 29, 2001 to May 18, 2002, started off earlier and heavier in comparison to the previous year. The majority of the cases occurred during January and February (See Fig. 1). The dominant strain-type was A/Panama/2007/99-like, which was included in the season's vaccine and could have been prevented by a flu shot. Sixty percent of all influenza A cases for the influenza season were found during these two months. Influenza A strains dominated the influenza season comprising seventy-nine percent (79%) of all influenza cases identified and fifty-eight percent (58%) of all identified viral respiratory illnesses (Fig.2).

During March through May influenza B strains were identified more frequently (Fig. 1). One hundred and thirty-eight influenza B cases were identified from March 1 to May 18, 2002. Forty-seven of these were identified as B/Hong Kong/22/2001-like (B/Victoria/2/87 lineage), which was not covered by the 2001-02 vaccine.

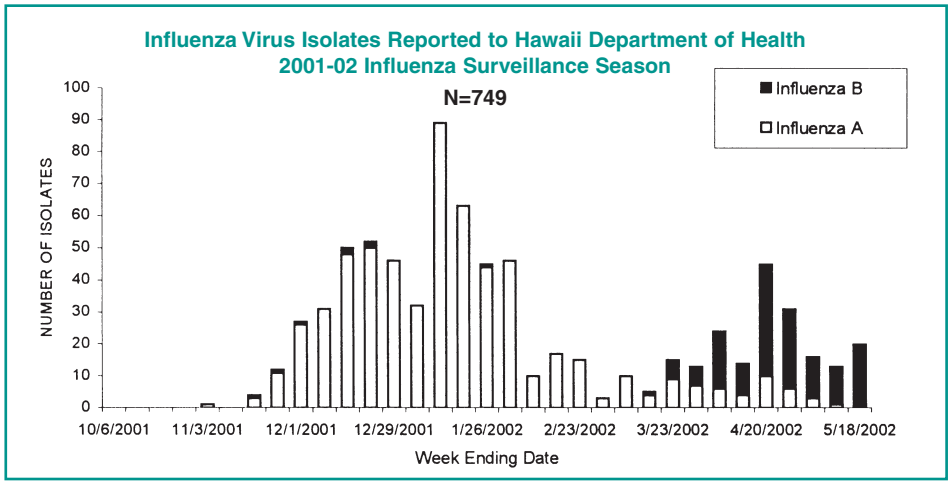

Figure 1

Since 1990, viruses of the B/Yamagata lineage have circulated widely and provided the influenza B component of this season's influenza vaccine. However, during 2001-02, the majority of influenza B viruses characterized in Hawai`i and United States were from the B/Victoria/2/87 lineage. Globally, the 2001-02 season reported detection of B/Victoria lineage viruses in Africa, Asia, Europe, and North America.

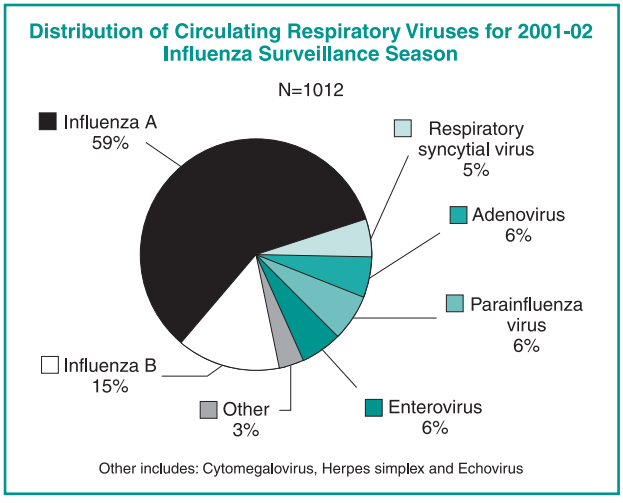

Figure 2

Viruses of the B/Victoria lineage had not been identified outside of Asia since 1991, until last summer when 18 isolates of influenza B "Victoria-like" virus were identified among Hawai`i residents with no travel history. The 2002-03 influenza vaccine will cover virus from the B/Victoria lineage (B/Hong Kong/330/01-like).

Hawai`i's influenza surveillance for 2001-02 season detected 595 influenza A and 154 influenza B virus isolates reported to date. Information on sub-typing and antigenic characterization was available for 115 isolates:

- 45 A/Panama/2007/99-like (H3N2)
- 18 A/NewCaledonia/20/99-like (H1N1)
- 47 B/Hong Kong/ 22/2001-like
- 5 B/Sichuan/379/99-like strains

For more information regarding Hawai`i's current and past influenza activity go to http://www.state.hi.us/doh/resource/comm_dis/flu/index.htm

2002-03 Influenza Vaccine

The Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee (VRBPAC) recommended that the 2002--03 trivalent influenza vaccine for the United States contain A/New Caledonia/20/99-like (H1N1), A/Moscow/10/99-like (H3N2), and B/Hong Kong/330/01-like viruses. This recommendation was based on antigenic characterization of circulating influenza viruses.

Most influenza A viruses isolated worldwide during the 2001-02 season were similar to A/Panama/2007/99-like and A/Moscow/10/99-like viruses. Therefore, VRBPAC recommended that influenza A/Moscow/10/99-like (H3N2) virus be retained in the 2002-03 vaccine. The vaccine will antigenically protect against both influenza A strains. Influenza vaccine manufacturers project that approximately 92-97 million doses will be available for distribution during the 2002-03 influenza season. For more information regarding the influenza vaccine go to: http://www.cdc.gov/ncidod/diseases/flu/fluvac.htm

Submitted by Tracy L. Ayers, M.S., Influenza Surveillance Coordinator, Epidemiology Branch.

2002 Influenza Vaccine

The Recommendations of the Advisory Committee on Immunization Practices (ACIP) on the Prevention and Control of Influenza for the upcoming flu season were published in the April 12, 2002 issue of the Morbidity and Mortality Weekly Report. The following is a condensed version of these recommendations.

Influenza vaccination is the primary method for preventing influenza and its severe complications. The primary target groups recommended for annual vaccination are:

1) groups who are at increased risk for influenza-related complications (e.g., persons aged 65 years and older and persons any age with certain chronic medical conditions);
2) persons aged 50-64 years, because this group has an elevated prevalence of certain chronic medical conditions; and
3) persons who live with or care for persons at high risk (e.g., healthcare workers and household members who have frequent contact with persons at high risk and can transmit influenza to persons at high risk).

Vaccination is associated with reductions in influenza-related respiratory illness, physician visits among all age groups, hospitalization and death among persons at high risk, otitis media among children, and work absenteeism among adults.

Primary Changes and Updates

The 2002 recommendations include five principal changes or updates, as follows:

1) The optimal time to receive influenza vaccine is during October and November.
2) Vaccination efforts for all groups should continue into December and later, for as long as vaccine is available.
3) Because young, otherwise healthy children are at increased risk for influenza-related hospitalization, vaccination of healthy children aged 6-23 months is encouraged whenever feasible. Vaccination of children aged six months who have certain medical conditions continues to be strongly recommended.
4) The 2002-2003 trivalent vaccine virus strains are A/Moscow/10/99 (H3N2)-like, A/New Caledonia/20/99 (H1N1)-like, and B/Hong Kong/330/2001-like strains.
5) A limited amount of influenza vaccine with reduced thimerosal content will be available for the 2002-2003 influenza season.

Target Groups for Vaccination

Persons at Increased Risk for Complications

Vaccination is recommended for the following groups of persons who are at increased risk for complications from influenza:

- persons aged 65 years and older;
- residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions;
- adults and children who have chronic disorders of the pulmonary or cardiovascular systems, including asthma;
- adults and children who have required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases including diabetes mellitus, renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or by HIV);
- children or adolescents aged 6 months - 18 years who are receiving long-term aspirin therapy and, therefore, might be at risk for developing Reye syndrome after influenza infection; and
- women who will be in the second or third trimester of pregnancy during the influenza season.

Persons Aged 50-64 years

Vaccination is recommended for persons aged 50-64 years because this group has an increased prevalence of persons with high-risk conditions.

Persons Who Can Transmit Influenza to Those at High Risk

The following groups should be vaccinated:

- physicians, nurses, and other personnel in both hospital and outpatient-care settings, including medical emergency response workers e.g., paramedics and emergency medical technicians;
- employees of nursing homes and chronic care facilities who have contact with patients or residents;
- employees of assisted living and other residences for persons in groups at high risk;
- persons who provide home care to persons in groups at high risk; and
- household members including children of persons in groups at high risk.

In addition, because children aged 0-23 months are at increased risk for influen-

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za-related hospitalization, vaccination is encouraged for their household contacts and out-of-home caretakers, particularly for contacts of children aged 0-5 months because influenza vaccines have not been approved by the FDA for use among children less than six months old.

Timing of Annual Vaccination

Vaccination in October and November

The optimal time to vaccinate is usually during October-November. However, because of delays in vaccine distribution during the two previous influenza seasons and the possibility of similar situations in future years, ACIP recommends that vaccine providers focus their vaccination efforts in October and earlier for persons at high risk and health-care workers. Vaccination of children aged less than nine years who are receiving vaccine for the first time should also begin in October because they need a booster dose one month after the initial dose. Vaccination of all other groups should begin in November, including household members of persons at high risk, healthy persons aged 50-64 years, and other persons who wish to decrease their risk for influenza infection.

Vaccination in December and Later

To improve vaccine coverage and use, influenza vaccine should continue to be offered in December and throughout the influenza season as long as vaccine supplies are available, even after influenza activity has been documented in the community. Adults develop peak antibody protection against influenza infection two weeks after vaccination.

Vaccination Before October

To avoid missed opportunities for vaccination of persons at high risk for serious complications, such persons should be offered vaccine beginning in September during routine health-care visits or during hospitalizations, if vaccine is available. In facilities housing older persons, vaccination before October should be avoided because antibody levels in such persons can begin to decline within a limited time after vaccination.

Timing of Organized Vaccination Campaigns

Persons planning organized vaccination campaigns should consider scheduling these events after mid-October because the availability of vaccine in any location cannot be ensured consistently in the early fall. Scheduling campaigns after mid-October will minimize the need for cancellations because vaccine is unavailable. Campaigns conducted before November should focus efforts on vaccination of persons at high risk, health-care workers, and household contacts of persons at high-risk to the extent feasible.

Vaccine Administration

Dosage

Dosage recommendations vary according to age group. Among previously unvaccinated children aged less than nine years, two doses administered one month apart are recommended. If possible, the second dose should be administered before December. Among adults, studies have indicated limited or no improvement in antibody response when a second dose is administered during the same season. Even when the current influenza vaccine contains antigens administered in previous years, annual vaccination with the current vaccine is necessary because immunity declines during the year after vaccination. Vaccine prepared for a previous influenza season should not be administered to provide protection for the current season.

Route

The intramuscular route is recommended for influenza vaccine. Adults and older children should be vaccinated in the deltoid muscle. Infants and children should be vaccinated in the anterolateral aspect of the thigh.

Side Effects and Adverse Reactions

When educating patients regarding potential side effects, clinicians should emphasize that:

1) Inactivated influenza vaccine contains noninfectious killed viruses and cannot cause influenza; and
2) coincidental respiratory disease unrelated to influenza vaccination can occur after vaccination.

The most frequent side effect of vaccination is soreness at the vaccination site (affecting 10-64% of patients) that lasts two days. These local reactions typically are mild and rarely interfere with a person's ability to conduct usual daily activities. Fever, malaise, myalgia, and other systemic symptoms can occur after vaccination and most often affect persons who have had no prior exposure to the influenza virus antigens in the vaccine - e.g., young children. These reactions begin 6-12 hours after vaccination and can persist for one or two days.

Immediate – presumably allergic – reactions e.g., hives, angioedema, allergic asthma, and systemic anaphylaxis, rarely occur after influenza vaccination. These reactions probably result from hypersensitivity to certain vaccine components. The majority of immediate reactions probably are caused by residual egg protein.

Simultaneous Administration of Other Vaccines

Pneumococcal polysaccharide and influenza vaccines can be administered at

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the same time at different sites without increasing side effects. However, influenza vaccine is administered each year, whereas pneumococcal vaccine is not.

Further details, including information on strategies for implementing influenza vaccine recommendations, recommendations for using antiviral agents for influenza, and Guillain-Barre Syndrome, may be found in: "Prevention and Control of Influenza," Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2002; 51 (RR-3): 1-32, at the National Immunization Program website: http://www.cdc.gov/nip, or by calling the Hawai`i Immunization Program at (808) 586-8300.

REFERENCE.

Centers for Disease Control and Prevention. Prevention and Control of Influenza – Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2002; 51 (RR-3): 1-32.

Smallpox in the News

The last naturally acquired case of smallpox occurred in Somalia, October 1977 and global eradication was certified by the World Health Organization two years later. After eradication, variola virus stocks were held under security at the Centers for Disease Control (CDC), Atlanta and in the State Research Centre, Kaltsov, Russia.

A Bioterrorism Agent?

Since September 11, 2001 there is an increased concern that the variola virus might be in the possession of terrorists and be used for biowarfare or bioterrorism. Health care workers are being asked to become familiar with the clinical and epidemiologic features of smallpox and how it is distinguished from chickenpox.

The disease

The onset of the disease is sudden with fever, malaise, headache, prostration, backache and occasional abdominal pain and vomiting. After two to four days the fever begins to fall and a generalized rash occurs which goes through successive stages of macules, papules, vesicles, pustules and crusted scabs. Lesions first appear on the face and extremities and later on the trunk. The fatality rate was 20-40%.

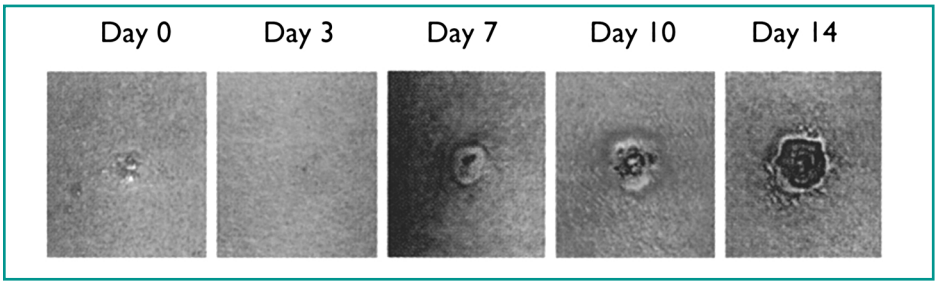
Prevention

Plans to protect the general population against a potential attack are underway and include the expansion of the stockpiles of vaccinia virus, which was the immunizing agent used to eradicate smallpox, and the development of recombinant vaccines.

Protection after smallpox vaccination is achieved quickly. If the vaccine is given within three to four days of the exposure, it can prevent or greatly reduce the symptoms. Immunity lasts for five to ten years. Since it has been decades since people have been immunized, it is assumed that virtually everyone is susceptible. (The general public in the US stopped routinely receiving the vaccine in 1971 and health workers in 1976.)

Contraindications

Since the years of routine immunization of children and adults, there are more individuals in our communities with contraindications to receiving the vaccine, which is a live virus vaccine. These contraindications include immunocompro-



Stages of vaccine lesions

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mised conditions such as AIDS and certain transplant and cancer patients, and persons with eczema and other skin conditions. Pregnancy is a contraindication to the vaccine in a non-emergent situation. Vaccine side affects are treated with human vaccinia immune globulin (VIG). Supplies of VIG are limited.

Federal guidelines are being developed and shared with states for their review and modification related to the most effective methods of vaccinating the population in case of an identified person with smallpox. The ring method of quickly immunizing all known contacts including health workers followed by a rapid voluntary vaccination of a large population is the approach now being recommended in a post-exposure situation. Soon to follow will be guidelines for pre-exposure vaccination of health care workers and other high-risk persons.

Federal guidelines and discussions about smallpox issues are available through the CDC web site.

Submitted by Mona R. Bomgaars, M.D., M.P.H., Physician, Communicable Disease Division.

Guidelines for Preventing Opportunistic Infections among HIV-infected Persons – 2002

The Centers for Disease Control (CDC) distributed the recommendations of the US Public Health Service and the Infectious Diseases Society of America in June 2002. The full text is available on *www.cdc.gov/mmwr* and includes a quiz, which if submitted provides 2.25 hours of continuing medical education.

Changes since the last edition (1999)

This is the fourth edition of the guidelines. Major changes since the last edition in 1999 include the following:

1) Recommendations on discontinuing prophylaxis among persons whom have responded to antiretroviral therapy.
2) Emphasis on screening all human immunodeficiency virus (HIV) positive persons for hepatitis C infection.
3) New information regarding human herpesvirus 8 transmission.
4) New information regarding drug interactions (rifamycins and antiviral drugs).
5) Immunization of HIV infected adults and HIV exposed children.

The guidelines are rated A through E based on the strength of the recommendation and I through III based on the quality of evidence supporting the recommendation. Some of the new recommendations will be highlighted in this article but it would be advisable to read the original document to become thoroughly familiar with the ever-changing research and resulting recommendations. The guidelines related to tuberculosis are presented in their entirety in this issue of the Communicable Disease Report.

Pneumocystis Pneumonia (PCP)

HIV-infected adults, adolescents and pregnant women should receive chemoprophylaxis against PCP if they have a CD4 T lymphocyte count of <200/ul (AI) or a history of oral candidiasis (AII). Those with a CD4 T lymphocyte count of <14% or a history of an AIDS-defining illness should also be considered for prophylaxis (BII). Trimethoprim-sulfamethoxazole (TMP-SMZ) continues to be the recommended prophylactic agent at one double-strength tablet per day (AI). This dosage gives cross-protection against toxoplasmosis and other common respiratory infections. Prophylaxis for PCP should be discontinued for adult and adolescent patients who have responded to highly active antiretroviral therapies (HAART) with an increase in CD4 T lymphocyte counts to greater than 200 cells/ul for three months or more (AI). If the count decreases to less than 200 cell/ul prophylaxis should be restarted (AIII).

Patients with a history of PCP should receive chemophylaxis for life (AI) unless immune reconstitution occurs as a consequence of HAART. Secondary prophylaxis should be discontinued for adult and adolescent patients whose CD4 T lymphocyte count increases to >200 cells/ul for three months or more as a result of HAART (BII). Apparently prophylaxis adds limited disease prevention in this situation and discontinuing the drugs reduces pill burden, potential for drug toxicity, interactions, resistance pathogens and cost. However, if the lymphocyte count decreases, prophylaxis should be restarted.

CHILDREN: Children born to HIV infected mothers should receive prophylaxis with TMP-SMZ beginning at 4-6 weeks of age (AII). If children are determined not to be HIV-infected, prophylaxis should be discontinued. But if the status remains unknown, children should receive prophylaxis for the first year of life. The need for further prophylaxis should be based on CD4 T lymphocyte

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counts (AII); i.e. < 500/ul for children up to five years of age.

Mycobacterium avium Complex (MAC)

Adults and adolescents with HIV infection should receive chemoprophylaxis against disseminated MAC disease, if their CD4 T lymphocyte count is <50 cells/ul (AI). Clarithromycin or azithromycin are the preferred agents (AI). In addition, each of these antibiotics confers protection against respiratory bacterial infections (BII). Before prophylaxis is started, disseminated MAC disease should be ruled out by clinical assessment, which may include a blood culture.

Primary prophylaxis should be discontinued in those patients who have responded to HAART with an increase in CD4 T lymphocyte counts to >100 cells/ul for three months or more (AI). If the CD4 T lymphocyte count decreases to 50-100 cells/ul, prophylaxis should be restarted.

Adult and adolescent patients with disseminated MAC should receive lifelong treatment (AII) unless immune reconstitution occurs as a result of HAART. After 12 months of treatment with a sustained increase (>6 months) in their CD4 T lymphocyte counts to >100 cells/UL after HAART, patients are at a low risk of recurrence. Therefore, discontinuing chronic maintenance therapy is now considered reasonable. (CIII). Some specialists recommend obtaining a blood culture for MAC before discontinuing treatment. If the CD4 T lymphocyte count decreases to <100 cells/ul secondary prophylaxis should be restarted (AIII).

PREGNANT WOMEN: Chemoprophylaxis for MAC disease should be administered to pregnant women (AIII). Azithromycin is the drug of choice (BIII). For secondary prophylaxis, azithromycin plus ethambutal are the preferred drugs (BIII).

CHILDREN: HIV-infected children are also at risk for disseminated MAC infections and should receive prophylaxis when their CD4 T lymphocyte counts decrease to the indicated age related levels (AII). Clarithromycin or azithromycin should be considered the preferred agents (AII). Children with a history of disseminated MAC should receive lifelong prophylaxis (AII). Safety of discontinuing MAC prophylaxis in children after HAART has not been studied.

Toxoplasmosis Encephalitis (TE)

HIV infected persons should be tested for IgG antibody to toxoplasma to detect latent infections with T. gondii (BIII). Toxoplasmosis-seropositive patients who have a CD4 T lymphocyte count of <100/ul should receive prophylaxis against toxoplasmic encephalitis (TE) (AII). The double strength tablet daily dose of TMP-SMZ recommended for PCP is also recommended for TE (AII). Prophylaxis should be discontinued when an increase in CD4 T lymphocyte counts to >200 cells/ul for more than three months occurs (AI). Prophylaxis should be reintroduced if the CD4 T lymphocyte count decreases to <100-200 cells/ul (AIII).

After treatment for TE, discontinuance of chronic maintenance therapy is a reasonable consideration if the CD4 T lymphocyte count remains >200 cells/ul after HAART for greater than six months (CIII). Secondary prophylaxis should be restarted if the CD4 T lymphocyte count decreases to 200 cells/ul AIII).

Hepatitis C Infection (HCV)

The primary route of HCV transmission the United States is injection drug use. All HIV infected patients should be screened for HCV infection (BIII) because the knowledge of HCV status is critical for the management of all HIV infected patients, i.e. especially for the interpretation and management of elevated liver tests. HAART should not be routinely withheld from co-infected patients (DIII); however, careful monitoring of liver function is required.

Persons co-infected with HIV and HCV should be advised not to drink excessive amounts of alcohol (AIII). Those with chronic HCV should receive hepatitis A vaccine because the risk for fulminant hepatitis is increased (BIII) and if susceptible, they also should receive hepatitis B vaccine (BIII).

Children born to co-infected women should be tested for HCV infection (BI) at two years of age, since maternal antibody can persist for 18 months. The average rate of HCV infection among children born to co-infected women is approximately 15%.

Human Herpes Virus 8 (HHV-8)

Persons co-infected with HIV and HHV-8 are at risk for Kaposi sarcoma (KS). The three major routes of transmitting HHV-8 are oral, semen and blood. HIV infected drug users should not share injection equipment, even if both are HIV infected to avoid HHV-8 or other bloodborn pathogens (BIII). Likewise, unprotected sex and deep kissing should be avoided to protect against transmission of HHV-8 (CIII).

Antiviral drug combinations that suppress HIV replication also reduce the frequency of KS among HIV infected persons (BII).

Rifampin and Antiviral Drugs

Rifampin can induce more rapid drug clearance in many anti-retroviral agents. The tuberculosis prevention article gives recommendations on the avoidance of drug interactions with the rifampins and antiviral drugs.

Immunizations

Children: Immunization recommendations for HIV infected children differ from immunocompetent children for the following vaccines:

1. Pneumococcal vaccine (PCV 7) is recommended for all children. Those HIV infected and over two years of age should also receive the pneumococcal polysaccharide vaccine (PPV 23). A second dose of PPV 23 should be given after 3-5 years in children less than 10 years of age.

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2. MMR should not be given to severely immunocompromised children. Those HIV infected children not severely compromised should receive a MMR as soon as possible after the first birthday and the second, before school entry.
3. Varicella vaccine is contraindicated for all HIV infected children with the exception of those children who are asymptomatic and are not immunosuppressed. Immune globulin VZIG should be given as soon as possible after contact with a person with chickenpox or shingles (AIII).
4. Influenza vaccine should be given annually. For those children receiving their first flu vaccine at six months to nine years of age, two doses are recommended one month apart.

Adults and adolescents: HIV infected adults and adolescents should be considered for vaccinations against hepatitis B virus, influenza and *Streptococcus* pneumonia.

Those with CD4 T lymphocyte counts >200 cells/ul should receive one dose of 23-valent polysaccharide pneumococcal vaccine (PPV), (BII). Those with a CD4 T lymphocyte count <200 should also be considered for PPV(CIII). Since clinical evidence has not proven efficacy at this level, revaccination can be considered when cell counts increase to >200 in response to HAART (CIII). As drug resistant strains of *S. pneumoniae* become more prevalent, the vaccine becomes increasingly pertinent. Periodic revaccination at five-year intervals is recommended for non-infected persons and may be appropriate for HIV infected persons (CIII).

Other Conditions

The Guidelines also include recommendations for discontinuing and restarting secondary prophylaxis for cryptococcosis, histoplasmosis, coccidioidomycosis, and cytomegalovirus retinitis.

This monograph is a usable reference for the practitioner involved in the clinical management of HIV-infected patients, because of the variety of tables and references supporting the guidelines.

REFERENCE:
Centers for Disease Control and Prevention. Guidelines for Preventing Opportunistic Infections Among HIV-Infected Persons – 2002 Recommendations of the U.S. Public Health Service and the Infectious Diseases Society of America. MMWR 2002;51(No. RR-8): 1-31.

Submitted by Mona R. Bomgaars, M.D., M.P.H., Physician, Communicable Disease Division.

Guidelines for Preventing Tuberculosis among HIV-Infected Persons - 2002

Preventing Exposure

HIV-infected persons should be advised that certain activities and occupations might increase the likelihood of exposure to tuberculosis (TB) (BIII). These include volunteer work or employment in health-care facilities, correctional institutions, and shelters for the homeless, as well as in other settings identified as high-risk by local health authorities. Decisions concerning whether to continue with activities in these settings should be made in conjunction with the health-care provider and should be based on such factors as the patient's specific duties in the workplace, prevalence of TB in the community, and the degree to which precautions are taken to prevent TB transmission in the workplace (BIII). Whether the patient continues with such activities might affect the frequency with which screening for TB needs to be conducted.

Preventing Disease

When HIV infection is first recognized, the patient should receive a tuberculin skin test (TST) by administration of intermediate-strength (5-TU) purified protein derivative (PPD) by the Mantoux method (AI). Routine evaluation for anergy is not recommended. However, situations exist in which anergy evaluation might assist in guiding decisions concerning preventive therapy (52,53).

All HIV-infected persons who have a positive TST result (>5 mm of induration) should undergo chest radiography and clinical evaluation to rule out active TB. HIV-infected persons who have symptoms indicating TB should promptly undergo chest radiography and clinical evaluation regardless of their TST status (AII).

All HIV-infected persons, regardless of age, who have a positive TST result but have no evidence of active TB and no history of treatment for active or latent TB should be treated for latent TB infection. Options include isoniazid daily (AII) or twice weekly (BII) for 9 months; 4 months of therapy daily with either rifampin (BIII) or rifabutin (CIII); or 2 months of therapy with either rifampin and pyrazinamide (BI) or rifabutin and pyrazinamide (CIII) (52--54). Reports exist of fatal and severe liver injury associated with treatment of latent TB infection among HIV-uninfected persons treated with the 2-month regimen of daily rifampin and pyrazinamide; therefore, using regimens that do not contain pyrazinamide among HIV-infected persons whose completion of treatment can be ensured is prudent (55). Because HIV-infected persons are at risk for peripheral

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neuropathy, those receiving isoniazid should also receive pyridoxine (BIII). Decisions to use a regimen containing either rifampin or rifabutin should be made after carefully considering potential drug interactions, including those related to PIs and nonnucleoside reverse transcriptase inhibitors (NNRTIs) (see the following section on Drug Interactions). Directly observed therapy should be used with intermittent dosing regimens (AI) and when otherwise operationally feasible (BIII) (53).

HIV-infected persons who are close contacts of persons who have infectious TB should be treated for latent TB infection, regardless of their TST results, age, or prior courses of treatment, after a diagnosis of active TB has been excluded (AII) (52--54). In addition to household contacts, such persons might also include contacts in the same drug-treatment or health-care facility, coworkers, and other contacts if transmission of TB is demonstrated.

For persons exposed to isoniazid- or rifampin-resistant TB, decisions to use chemoprophylactic antimycobacterial agents other than isoniazid alone, rifampin or rifabutin alone, rifampin plus pyrazinamide, or rifabutin plus pyrazinamide should be based on the relative risk for exposure to resistant organisms and should be made in consultation with public health authorities (AII). TST-negative, HIV-infected persons from groups at risk or geographic areas with a high prevalence of M. tuberculosis infection might be at increased risk for primary or reactivation TB. However, efficacy of treatment among this group has not been demonstrated. Decisions concerning using chemoprophylaxis in these situations must be considered individually.

Although the reliability of TST might diminish as the CD4+ T lymphocyte count declines, annual repeat testing should be considered for HIV-infected persons who are TST-negative on initial evaluation and who belong to populations in which a substantial risk for exposure to M. tuberculosis exists (BIII). Clinicians should consider repeating TST for persons whose initial skin test was negative and whose immune function has improved in response to HAART (i.e., those whose CD4+ T lymphocyte count has increased to >200 cells/µL) (BIII) (52). In addition to confirming TB infection, TST conversion in an HIV-infected person should alert health-care providers to the possibility of recent M. tuberculosis transmission and should prompt notification of public health officials for investigation to identify a possible source case. Administering bacille Calmette-Guérin (BCG) vaccine to HIV-infected persons is contraindicated because of its potential to cause disseminated disease (EII).

Preventing Recurrence

Chronic suppressive therapy for a patient who has successfully completed a recommended regimen of treatment for TB is unnecessary (DII).

Special Considerations

Drug Interactions. Rifampin can induce metabolism of all PIs and NNRTIs. This can result in more rapid drug clearance and possibly subtherapeutic drug concentrations of the majority of these antiretroviral agents. Rifampin should not be coadministered with the following PIs and NNRTIs: amprenavir, indinavir, lopinavir/ritonavir, nelfinavir, saquinavir, and delavirdine (54). However, it can be used with ritonavir, ritonavir plus saquinavir, efavirenz, and possibly with nevirapine. Rifabutin is an acceptable alternative to rifampin but should not be used with the PI hard-gel saquinavir or delavirdine; caution is advised if the drug is coadministered with soft-gel saquinavir because data are limited. Rifabutin can be administered at one half the usual daily dose (i.e., reduce from 300 mg to 150 mg/day) with indinavir, nelfinavir, or amprenavir or with one fourth the usual dose (i.e., 150 mg every other day or three times a week), with ritonavir, ritonavir plus saquinavir, or lopinavir/ritonavir. When rifabutin is administered with indinavir as a single PI, the dose of indinavir should be increased from 800 mg/8 hours to 1,000 mg/8 hours. Pharmacokinetic data indicate that rifabutin at an increased dose can be administered with efavirenz; doses of 450-600 mg/day have been recommended (54). However, available information is limited concerning appropriate dosing if a PI is used concurrently with efavirenz and rifabutin; with such a combination, the rifabutin dose might need to be reduced. Rifabutin can be used without dose adjustment with nevirapine.

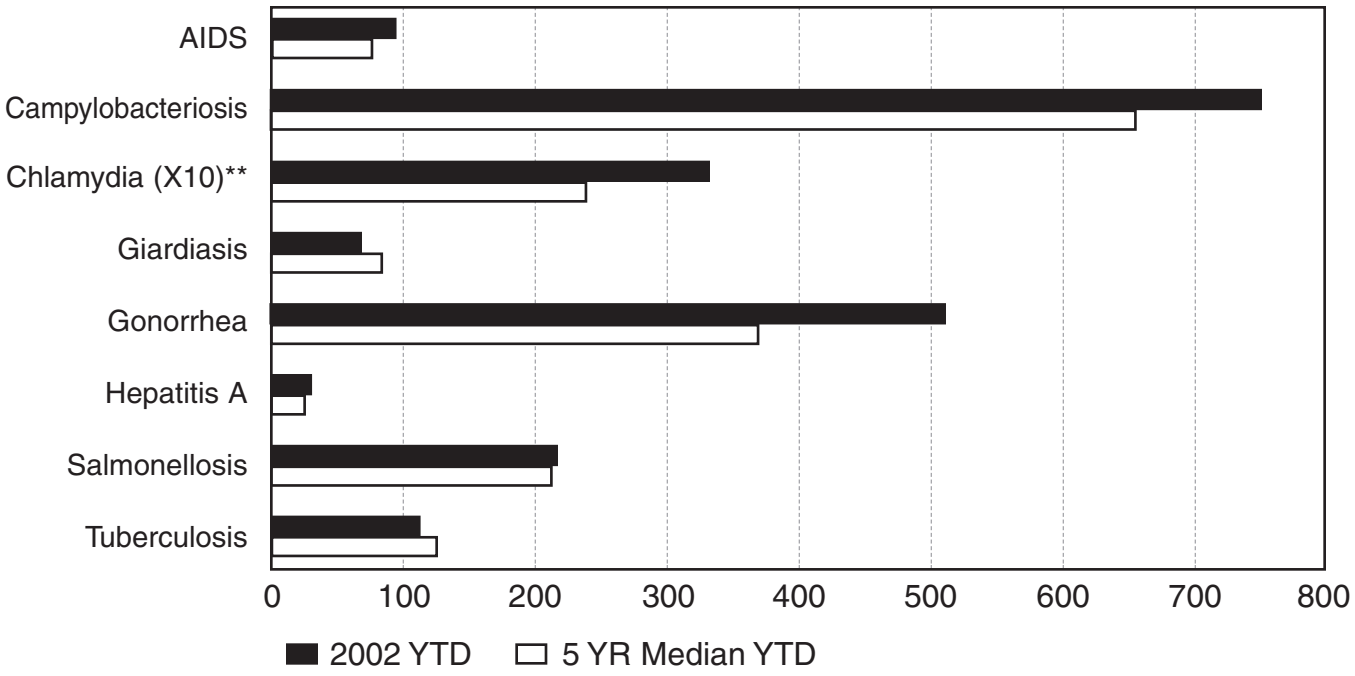
Children. Infants born to HIV-infected mothers should have a TST (5-TU PPD) at or before age 9--12 months, and the infants should be retested >1 times/year (AIII). HIV-infected children living in households with TST-positive persons should be evaluated for TB (AIII); children exposed to a person who has active TB should be administered preventive therapy after active TB has been excluded, regardless of their TST results (AII).

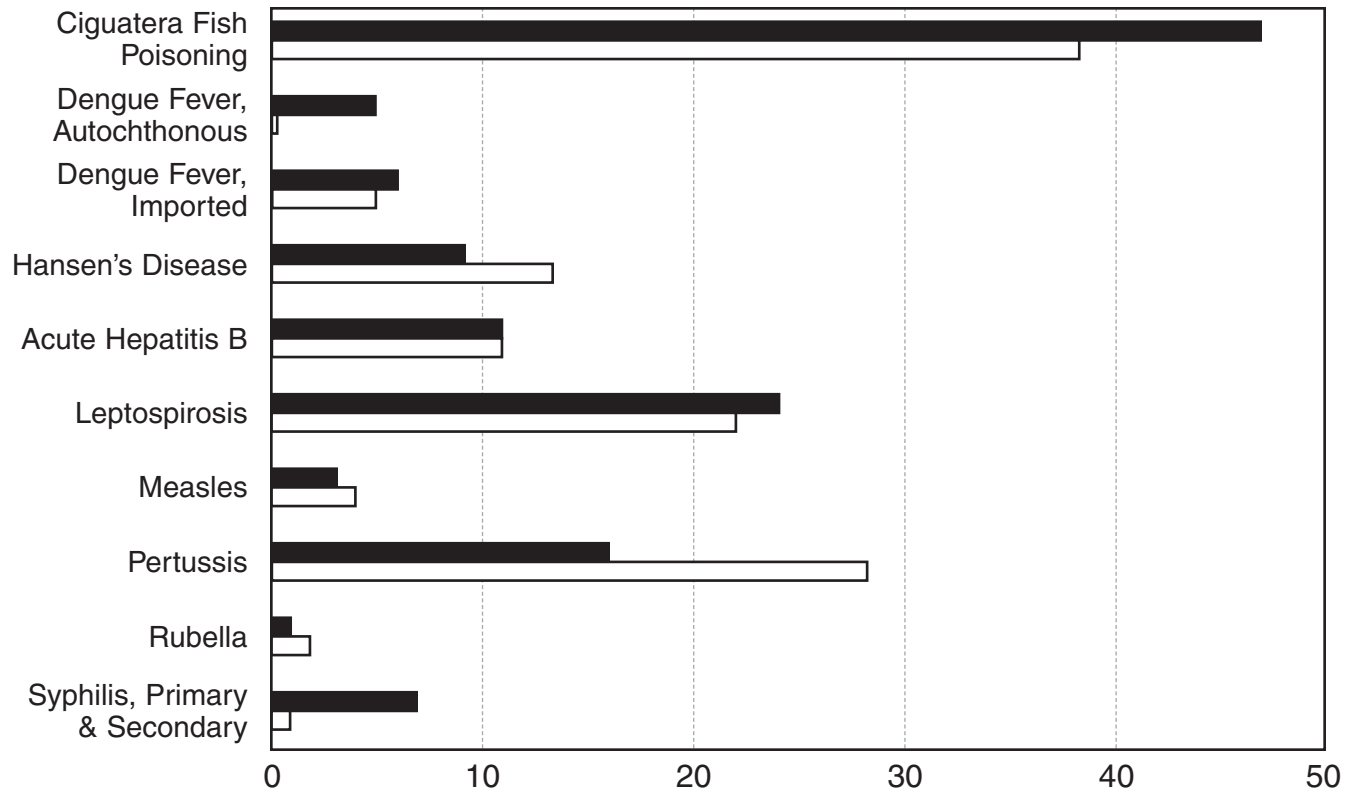
Pregnant Women. Chemoprophylaxis for TB is recommended during pregnancy for HIV-infected patients who have either a positive TST or a history of exposure to active TB, after active TB has been excluded (AIII). A chest radiograph should be obtained before treatment and appropriate abdominal or pelvic lead apron shields should be used to minimize radiation exposure to the embryo or fetus. When an HIV-infected person has not been exposed to drug-resistant TB, isoniazid daily or twice weekly is the prophylactic regimen of choice. Because of concerns regarding possible teratogenicity associated with drug exposures during the first trimester, health-care providers might choose to initiate prophylaxis after the first trimester. Preventive therapy with isoniazid should be accompanied by pyridoxine to reduce the risk for neurotoxicity. Experience with rifampin or rifabutin during pregnancy is more limited, but anecdotal information with rifampin has not been associated with adverse pregnancy outcomes. Pyrazinamide should usually be avoided, chiefly in the first trimester, because of lack of information concerning fetal effects.

REFERENCE:
Centers for Disease Control and Prevention. Guidelines for Preventing Opportunistic Infections Among HIV-Infected Persons – 2002 Recommendations of the U. S. Public Health Service and the Infectious Diseases Society of America. MMWR 2002;51(No. RR-8): 8-10.

Communicable Disease Surveillance

Selected Diseases by Date of Report*
Hawai'i, 2002 Year-to-date Through September





* These data do not agree with tables using date of onset or date of diagnosis.
** The number of cases graphed represent 10% of the total number reported.

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The Health State
HAWAI'I STATE DEPARTMENT OF HEALTH

Communicable Disease Report

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